

TOPOGRAPHICAL AND ECOLOGICAL NOTES ON THE  
FLORA OF THE BLUE MOUNTAINS.

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During occasional visits to the Blue Mountains, extending over a period of twenty years, desultory observations were made on the limitation of the range of several species of the flora, chiefly in respect of elevation. Three years ago, a systematic survey of the boundaries of certain well known species was commenced, but, as is invariably the case, the sphere of operations has become considerably enlarged, so that this paper deals briefly with some four hundred (400) species of the mountain-flora, which have been collected between the Nepean-Hawkesbury on the east, and Eskbank on the west, an area embracing the lowest and highest elevations on the Blue Mountains. A commencement was made with the material at hand in the National Herbarium, which, though rich in species, was found to be topographically weak, not a few of the labels, especially those of the early collectors, giving a no more explicit locality than the Blue Mountains. A fair sprinkling of the commoner plants were conspicuous by their absence, each collector, doubtless, considering that they had already been forwarded by an earlier one; while Glumiferæ, especially Juncaceæ, Restiaceæ, and Cyperaceæ, were, as usual, neglected. It was noted that fully fifty per cent. of the specimens had been collected by the Government Botanist, Mr. J. H. Maiden, many of them in company with Mr. R. H. Cambage, on their various journeys over the routes followed by Allan Cunningham and other Blue Mountain explorers (Journ. Proc. Roy. Soc. N. S. Wales, xliii., p.123), all of which are from specific localities. A field-collection was then started, to bridge the gaps, but an exhaustive search of such a large area was found to be impracticable in the time at the writer's disposal; and his justification for offering such an incomplete work is, that it may prove useful as a basis, which may be conveniently added to as

occasion presents itself for further observations by the numerous devotees of this exceptionally interesting flora. Examples from the localities given in this paper, which were not already in the National Herbarium, have been incorporated in the collection.

In a paper published in Barron Field's "Geographical Memoirs on New South Wales," Allan Cunningham has given us, "A Specimen of the Botany of the Blue Mountains." "The Flora of Mt. Wilson," was dealt with by Mr. A. G. Hamilton, in these Proceedings, 1899, p.346. Mr. W. M. Carne has treated of a section of the area at a lower elevation, in his "Note on the Occurrence of a Limestone Flora at Grose Vale" (These Proceedings, 1910, p.849). "A List of the Plants collected in the Vicinity of the Jenolan Caves," by Messrs. W. F. Blakely and J. C. Wyburd (communicated by Mr. J. H. Maiden), will be found in the Agricultural Gazette of New South Wales, 1901, p.1390. Messrs. J. H. Maiden, F.L.S., and R. H. Cabbage, F.L.S., have mentioned the Blue Mountain flora generally in "The Handbook of New South Wales," published under the auspices of the British Association for the Advancement of Science, 1914, p.410; also in the botanical, topographical, and geological notes (taken on their carefully detailed traverse) on some routes of Allan Cunningham (Journ. Proc. Roy. Soc. N. S. Wales xliii., p.123); and Mr. Cabbage has touched upon some aspects of the climatic and geological influences on the flora in a paper read before the Australasian Association for the Advancement of Science, at Adelaide (Report xi., 1907). Both Mr. Hamilton and Mr. Carne note, in the respective areas dealt with, that many of the plants listed are not typical of the ordinary sandstone-flora of the mountains; and the same may be said of the Jenolan Caves area.

Some examples of the hygrophytic Nepean-Hawkesbury flora have attained a considerable altitude by avoiding the direct westerly ascent of the mountains, and following, instead, the courses of the Warragamba and Cox Rivers into the Jamieson and Kanimbla Valleys, from which they have crept up the moist, sheltered, brush-clad gorges at Wentworth Falls, Leura, Katoomba, Blackheath, and Mt. Victoria, frequently climbing up

the débris at the base of the uppermost ledges of the escarpment to within a few feet of the level of the tableland, the process being repeated on the other side of the mountains viâ the Valley of the Grose.

King's Tableland, Wentworth Falls, forms a natural barrier east and west, which either checks or entirely prevents the ascent or descent of many species. On this bleak, wind-swept, soil-denuded plateau, which is typical of much of the area westward and upward, a xerophytic flora is in undisputed possession; and many of the plants from the coast and foothills, which have reached the elevation at Lawson, find the ascent of this sterile ridge a feat beyond the limit of their endurance, and are content to remain in the shelter of its eastern slopes. On the other hand, most of the dry-ridge xerophytes descending from the higher altitudes make their last stand on this elongated spur, finding on it the lowest elevation to which they can safely descend. A percentage of the swamp-xerophytes, chiefly Glumiferae, persists to a much lower elevation. This objection, on the part of the dry-ridge xerophyte, to surroundings which would be considered ideal by many plants, is exemplified in the case of *Eriostemon obovalis* A. Cunn., which grows on the baldest and most exposed hilltops out to the cliff-edge. The fruits of this species are of the explosive type, and, when ripe, the polished and somewhat rounded seeds are expelled with considerable force, many of them rolling over the cliffs into the rich detritus of the moist, sheltered gully below. The seeds, however, resist the softening influence of the unfamiliar environment, and decline to germinate. The winged seeds of *Casuarina nana* Sieb., which are carried by the wind into positions favoured by most plants, provide another instance of the characteristic inability of the dry-ridge xerophyte to reproduce itself in unaccustomed surroundings, which will at once recur to botanists familiar with the Blue Mountain flora. Apparently an exception is provided by *Boronia anemonifolia* A. Cunn., which, when growing on the ridges, is an insignificant, scabrous, twiggy shrub, a few inches high, but gradually improves in size and appearance as it descends into more hospitable quarters, and, finally, becomes an

open spreading shrub of 3-4 feet. An even more remarkable exception occurs near Bell, where, on the bald ridges, a *Leptospermum* was noted, which, prostrate and almost leafless, with short branches and thickened shoots, appeared to be in the last stages of degeneracy. Followed down a bush-track, the plants were seen to assume an upright habit, and fling out an occasional rampant branch, responding to the superior conditions of shelter, moisture, and food-supply, until, on reaching the Valley of the Grose, it had, by various stages, become a graceful shrub 12 feet high, thickly clad with delicate foliage. Several species which traverse the area under notice, undergo considerable modifications. *Acacia suaveolens* Willd., (which invariably displays xerophytic tendencies) maintains its coastal configuration until it reaches King's Tableland, when it assumes the habit of the elevated dry-ridge xerophyte (These Proceedings, 1914, p.471). Another example is *Bæckea densifolia* Sm., which, in the neighbourhood of Valley Heights, is an open, graceful plant, but, on the dry ridges exposed to the bleak "Westerlies" at the 3,500 feet level, it exhibits the usual characters resultant from its harsher environment (These Proceedings, 1914, p.254).

Traffic, here as elsewhere, is responsible for the distribution of the more adaptable species. Two of the most prominent are *Calotis cuneifolia* R.Br., (with blue), and *C. lappulacea* Benth., (with yellow flowers), both of which may be noted from the train following the railway-track throughout the area. The ubiquitous, weedy *Helichrysum apiculatum* DC., may also be placed in this category.

The following species have not previously been recorded (so far as the writer has ascertained) from the Blue Mountains:—*Comesperma defoliatum* F.v.M., *Claytonia Pickeringii* F.v.M., *Zieria pilosa* Rudge, *Boronia parviflora* Sm., *Viminaria denudata* Sm., *Bæckea diosmifolia* Rudge, *Melaleuca linariifolia* Sm., *Leucopogon appressus* R.Br., [In Barron Field's "Geographical Memoirs on New South Wales," p.341, Allan Cunningham records *L. appressus* R.Br., as frequent on the mountains. Bentham, Fl. Austr., iv., 223, shows that *L. appressus* R.Br., had been collected in only one locality, viz., Port Jackson, Coll.

R. Brown, adding, "Not seen in any other collection. The plant sent by A. Cunningham to De Candolle and described by him as *L. appressus*, does not differ from *L. esquamatus* R.Br." This specimen is referred to in DC., Prod., vii., 754, as *L. appressus* Br., Blue Mts., "Kingsfalls," Coll. Cunn. *L. esquamatus* R.Br., is thus recorded from the Blue Mountains for the first time in the Fl. Austr., iv., 223, a record which has been overlooked by the authors of the Handbook of the Flora of N. S. Wales. The rare *L. appressus* R.Br., (These Proceedings, 1913, p.110) is now recorded as a member of the Blue Mountain flora]; *Epacris pulchella* Cav., [it is singular that such a conspicuous species, which crosses the Blue Mountains tableland at all elevations, should have so long escaped recognition as a member of its flora by botanical writers], *Logania pusilla* R.Br., *Veronica notabilis* F.v.M., *Micrantheum ericoides* Desf., *Lepironia mucronata* Rich., *Schenus ericetorum* R.Br.

Species previously recorded on the Blue Mountains from Mt. Wilson only are—*Cryptandra ericifolia* Sm., *Mirbelia reticulata* Sm., (another species found throughout the mountains in swamps and on sandstone-ridges, which has apparently been overlooked), *Gompholobium glabratum* DC, *Cassinia denticulata* R.Br., *Monotaxis linifolia* Brongn., ("Flora of Mt. Wilson," by A. G. Hamilton, These Proceedings, 1899, p.346).

*Callistemon Sieberi* DC., is recorded in the "Handbook of the Flora of N. S. Wales," by Moore and Betche, from the dividing range, but not specifically from the Blue Mts. It is plentiful in the swamp below the Newnes Junction railway station, also in a swamp about one and a half miles from Eskbank on the road to "Brown's Gap." It is confined to the higher elevations, and has not been collected east of Newnes Junction.

*Kunzea corifolia* Reichb., is noted for the first time as a Blue Mountain species by Miss Florence Sulman (Wild Flowers of New South Wales, p.155). Messrs Maiden and Cabbage, in the "Flora of the Tablelands," (Handbook of New South Wales, Brit. Assoc. for the Advancement of Science, 1914, p.411) mention *Backhousia myrtifolia* Hook. & Harv., from the lower slopes; it had been recorded previously (on the Blue Mts.) only

from the Jenolan Caves by Messrs. Blakely & Wyburd (Agric. Gaz. N. S. Wales, 1901, p.1390).

The following species and vars. are endemic on the Blue Mts.:—*Zieria involucrata* R.Br., *Pultenaea glabra* Benth., *Acacia trinervata* Sieb., *A. asparagoides* A. Cunn., *A. Baueri* Benth., var. *aspera* Maiden & Betche (ined.), *A. obtusata* Sieb., var. *Hamiltoni* Maiden & Betche, *A. Dorothea* Maiden, *Acrophyllum venosum* Benth., *Actinotus Forsythii* Maiden & Betche, *Goodenia dimorpha* Maiden & Betche, *Epacris reclinata* A. Cunn., *E. rigida* Sieb., *E. Hamiltoni* Maiden & Betche, *E. apiculata* A. Cunn., *Rupicola sprengelioides* Maiden & Betche, *Sprengelia ponceletioides* Sond., *Isopogon Fletcheri* F.v.M., *Persoonia angulata* R.Br., *Grevillea Gaudichaudii* R.Br., *G. acanthifolia* A. Cunn., *Atkinsonia ligustrina* F.v.M., *Pherosphaera Fitzgeraldi* F.v.M., *Adenochilus Nortoni* Fitzg., *Alania Endlicheri* Kunth, *Notochloë (Triodia) microdon* (F.v.M.) Domin. Two well-known Blue Mountain species are noted, each having only once been collected elsewhere, viz., *Grevillea laurifolia* Sieb., Wombeyan Caves (Taralga Road), J. H. Maiden, x., 1905; and *Persoonia Chamæpitys* A. Cunn., Bylong Creek, Goulburn River, R. T. Baker, xi., 1892.

*Note.*—Numerals are used to denote previous records as under:

(1) Jenolan Caves List. Blakely & Wyburd, Agric. Gazette N. S. Wales, 1901, p.1390.

(2) Flora of Mt. Wilson. A. G. Hamilton, These Proceedings, 1899, p.346.

(3) Occurrence of a Limestone Flora. W. M. Carne, These Proceedings, 1910, p.849.

Unless otherwise stated, the species enumerated are found on the tableland-sandstone.

#### RANUNCULACEÆ.

*Clematis glycinoides* DC., (1), (2), (3), Nepean River. Its congener, *C. aristata* R.Br., is a more adaptable plant found at all elevations on the mountains.

#### DILLENIACEÆ.

*Hibbertia bracteata* Benth., from the Nepean River west to Lawson; *H. Billardieri* F.v.M., (2), Nepean to Bell; *H. serpyllifolia*

R.Br.,(2), Wentworth Falls to west of Eskbank; *H. pedunculata* R.Br., Leura and Blackheath; *H. diffusa* R.Br., Nepean to Glenbrook; *H. saligna* R.Br., (2), Nepean, Springwood, Kurrajong Heights, (in moist, sheltered gullies).

*Hibbertia nitida* Benth., (*Pleurandra Cneorum* DC.).—In Barron Field's "N. S. Wales," A. Cunningham records *P. Cneorum* from "Brushes on King's Tableland." Bentham, Fl. Austr., i., 25, reduces this to a synonym of *H. nitida* Benth., and gives as a locality for his species, "About Port Jackson, R. Brown, Sieber n.141," and others, but does not mention A. Cunningham's specimen from the Blue Mts. In the Handbook of the Flora of N. S. Wales, by Moore & Betche, the only locality given for *H. nitida* is near Sydney, in peaty soil. The writer has not noted any form of *H. nitida* on the Blue Mountains, nor are there any specimens in the National Herbarium from that locality.

#### MAGNOLIACEÆ.

*Drimys dipetala* F.v.M.,(2), (3), Springwood (Sassafras Gully), and Blackheath, a coastal brush-plant which creeps up the gullies.

#### VIOLARIÆ.

*Ionidium filiforme* F.v.M.,(1), (2), the normal coastal form is collected west to Glenbrook. At Wentworth Falls, a short-leaved, xerophytic form is met, which persists westward, to and beyond Eskbank.

#### PITTOSPOREÆ.

*Citriobatus multiflorus* A. Cunn.,(2), (3), Springwood (Sassafras Gully).

#### POLYGALEÆ.

*Comesperma sphaerocarpum* Steetz, Lawson, Mt. Tomah; *T. retusum* Labill., Mt. Victoria; *C. defoliatum* F.v.M., King's Tableland, Leura, Blackheath, a swamp-xerophyte, with a few linear leaves, occasionally reduced to scales.

#### CARYOPHYLLÆ.

*Stellaria pungens* Brongn.,(1), (2), Eskbank, in elevated situations.

## PORTULACÆ.

*Claytonia Pickeringi* F.v.M., Glenbrook, a somewhat rare, rock-xerophyte, with tuberous roots, and succulent stems and leaves.

## MALVACEÆ.

*Howittia trilocularis* F.v.M.. Nepean, Wentworth Falls, Grose River, in brush-gullies.

## STERCULIACEÆ.

*Rulingia pannosa* R.Br., Nepean, Blaxland, Mt. Tomah.

*Lasiopetalum dasyphyllum* Sieb.,(2), Grose River.

## TILIACEÆ.

*Elæocarpus cyaneus* Ait.,(1), (2), Glenbrook, King's Tableland, Mt. Tomah; *E. holopetalus* F.v.M.,(2), Wentworth Falls, Leura, (the Fishing Pool, near Gordon Falls), Katoomba, Mt. Tomah, in moist sheltered gullies.

## RUTACEÆ.

*Correa speciosa* Andr.,(1), Springwood.

*Zieria levigata* Sm.,(2), Wentworth Falls to west of Eskbank; *Z. pilosa* Rudge, Glenbrook, Springwood, Linden; *Z. involucrata* R.Br.,[The only locality from which this species has been recorded is "Valleys of the Blue Mountains, Backhouse."(Fl. Austr., i., 306). In his key to the species (p.304), Bentham gives, as a distinctive character of *Z. involucrata*, "Upper leaves simple"; in his specific description he gives "Lower leaves simple." Either of these statements may be accepted, as, in a large number of plants examined *in situ*, it was found that the position of the simple and trifoliate leaves was about equally distributed (upper and lower), and the foliage would, perhaps, be better described as heterophyllous. The only example of this species in the National Herbarium was collected on the north of the railway near Springwood, by Mr. J. J. Fletcher (x., 1888). The writer, a few years ago, found a group of these plants in a valley on the southern side of the railway-line, between Springwood and the Valley Heights, which may be conveniently entered by a branch-gully commencing at Valley Heights railway-station. The plants



will be found within half a mile of the station near the water-course]; *Z. cytisoides* Sm., Glenbrook Creek, Wolgan Valley (does not cross the tableland); *Z. Smithii* Andr., (2), Glenbrook, Springwood, Mt. Tomah.

*Boronia Fraseri* Hook., Nepean, Blaxland, Springwood (Sassafras Gully), a Nepean-Hawkesbury shrub, which does not cross the tableland; *B. microphylla* Sieb., (2), King's Tableland to west of Eskbank; *B. anemonifolia* A. Cunn., (2), Leura (Mt. Hay Rd.), to west of Eskbank, on dry ridges and in moist gullies; *B. polygalifolia* Sm., Glenbrook and Mt. Victoria; *B. parviflora* Sm., Springwood, Wentworth Falls, Leura, in swamps; *B. Barkeriana* F.v.M., (2), Blackheath, between Blackheath and Mt. Victoria.

*Eriostemon myoporoides* DC., (1), a riverbank-shrub found as far west as the Hartley Valley, viâ the Cox [At Emu Plains, it has attempted the ascent of the tableland, spreading over the Lapstone Hill towards Glenbrook. Several plants have reached Falconbridge, and established a small colony on the south-east side of the railway-station; and a solitary bush was noticed on the northern side of the Bathurst Road, which had reached within a quarter of a mile of Linden railway-station]; *E. hispidulus* Sieb., Nepean to Lawson; *E. obovalis* A. Cunn., (2). The type-locality given by A. Cunningham for his species is "Verge of Regent's Glen" (now the Valley of the Waters, Wentworth Falls), and this is the lowest elevation at which, within the writer's knowledge, it has been collected on the Blue Mountains; it ascends to west of Eskbank.

*Phebalium dentatum* Sm., The Lagoon, Sassafras Gully, a coastal valley- and riverbank-species; *P. squamulosum* Vent., Nepean to Springwood; *P. Billardieri* A. Juss., (2), Springwood, Blackheath, in brush-gullies

*Phebalium lachnoides* A. Cunn., (*P. phyllicifolium* F.v.M., var. *lachnoides* F.v.M.) is recorded in Field's New South Wales, 332, as a handsome shrub found in bare rocky situations at Blackheath. In the Flora Austr., i., 339, the habitat given for *P. lachnoides* A. Cunn., is the Blue Mountains, but no specific locality is mentioned. There are no specimens of *P. lachnoides* in the National Herbarium, nor has the writer seen it on the

mountains. Botanists visiting the mountains might note the specific locality (Blackheath).

## RHAMNEÆ.

*Pomaderris elliptica* Labill.,(2), Leura; *P. phillyroides* Sieb., (1), (2), Leura, west to Eskbank; *P. ledifolia* A. Cunn.,(2), Wentworth Falls, west to beyond Eskbank; *P. apetala* Labill.,(1),(2), Grose River.

*Cryptandra ericifolia* Sm.,(2), King's Tableland and Leura, in moist places.

## AMPELIDÆ.

*Vitis hypoglauca* F.v.M.,(2), Linden, in gullies.

## SAPINDACEÆ.

*Dodonæa triquetra* Weendl., Glenbrook, Valley Heights, Linden; *D. boroniifolia* G. Don, Katoomba, on the banks of Megalong Creek, a few yards beyond the four-mile post, on the track to Jenolan Caves, via Nelly's Glen.

## LEGUMINOSÆ.

*Mirbelia grandiflora* Ait.,(2), Wentworth Falls, to west of Eskbank; *M. pungens* A. Cunn., Leura and Newnes Junction, on dry ridges.

*Gompholobium latifolium* Sm.,(2), Glenbrook, west to Bell; *G. Huegelii* Benth.,(2), Medlow Bath (on track to Wall's Caves), west beyond Eskbank; *G. grandiflorum* Sm.,(2), var. *setifolium* DC., Glenbrook, west to Leura; *G. uncinatum* A. Cunn.,(2), Mt. Victoria (on the side of the road to Mt. Victoria Falls), west beyond Eskbank, a dry-ridge xerophyte; *G. glabratum* DC.,(2), Linden, Lawson, Leura.

*Jacksonia scoparia* R.Br. Lapstone Hill (creeps up by the old railway-line from Emu Plains), Burragarang to Wentworth Falls.

*Viminaria denudata* Sm., Glenbrook Lagoon, in swamps and watercourses.

*Daviesia latifolia* R.Br.,(2), Blackheath, Cox's River, Newnes Junction to Eskbank; *D. corymbosa* Sm.,(1), Nepean to Leura; *D. squarrosa* Sm., Nepean to Glenbrook; *D. aluta* Sm.,(2), Glenbrook (on the flat, north side of the old railway-station), Leura

(Sublime Point), Medlow Bath (in moist places near Wall's Caves).

*Pultenaea daphnoides* Wendl., Hazelbrook, Lawson to Wentworth Falls; *P. micronata* F.v.M., Blackheath, Leura (in a swampy piece of ground on track to the "Fishing Pool"), the lowest elevation recorded for this species on the Blue Mountains (These Proceedings, 1901, p.213); *P. polifolia* A. Cunn., Hazelbrook, at the head of a gully on the south side of the railway-line, about 300 yards west from the station; *P. microphylla* Sieb., midway between Bell and Newnes Junction; *P. incurvata* A. Cunn., Lawson to west of Eskbank, in swamps; *P. glabra* Benth., a species rarely collected, though it is plentiful in swamps, from Hazelbrook to Katoomba, [It bears a superficial resemblance to *P. stipularis*, and may easily be mistaken for that species. In the descent of "Leura Falls" by the old track from the "Meeting of the Waters," a group of these plants may be seen in the swamp to the left of the track by the side of the "Cascades"]; *P. plumosa* Sieb., Leura to west of Eskbank, on peaty flats and moist hillsides; *P. echinula* Sieb., Hazelbrook west to Mt. Wilson, frequently in company with *P. glabra*; *P. villosa* Willd., Nepean to Valley Heights, plentiful in the vicinity of Glenbrook Lagoon; *P. flexilis* Sm.,(2), Nepean, Glenbrook, Valley Heights, Mt. Tomah; *P. elliptica* Sm.,(2), Nepean, west to Leura.

*Dillwynia brunioides* Meissn., King's Tableland, west to Mt. Victoria, on dry ridges.

*Platylobium formosum* Sm., Lawson to Wentworth Falls.

*Bossiaea lenticularis* Sieb.,(2), Lawson, Mt. Tomah, Newnes Junction, Clarence, in moist situations; *B. prostrata* R.Br.,(1), Lapstone Hill, Eskbank; *B. rhombifolia* Sieb., Nepean, west to Linden; *B. microphylla* Sm., Nepean to Leura, Mt. Hay Road; *B. ensata* Sieb.,(2), Falconbridge, west to Mt. Wilson.

*Hovea longifolia* R.Br.,(2), Nepean to Valley Heights, in gullies.

*Desmodium rhytidophyllum* F.v.M., Glenbrook.

*Hardenbergia monophylla* Benth.,(1), (2), Nepean, Glenbrook, Mt. Victoria; *Kennedya rubicunda* Vent.,(2), Glenbrook, Valley Heights; *K. prostrata* R.Br., the only example of this species in

the National Herbarium, from the Blue Mountains, was collected by the late Mr. E. Betche, and is labelled Blue Mts., without specific locality.

*Acacia trinervata* Sieb., [The centre of activity of this species is in the neighbourhood of Springwood, thence westerly to Falconbridge, and northerly to the "Kurrajong." A fine plantation may be seen on the Windsor Road, about three miles from Springwood. The writer recently found three isolated plants on a rise a few hundred yards east of the present Glenbrook Railway-Station; and Mr. R. H. Cambage has collected specimens below Wilberforce near Windsor]; *A. asparagoides* A. Cunn., (2), a species which is more widely diffused than has hitherto been suspected [Its general appearance, when not in flower, is so similar to its ubiquitous congener, *A. juniperina* Willd., that it has undoubtedly been permitted to pass as that species by many collectors, for it is common on both sides of the Bathurst Road between Medlow and Blackheath (These Proceedings, 1910, p.414); and there are many clumps of these shrubs on the higher elevations between the type-locality (Regent's Glen, Wentworth Falls) and Eskbank]; *A. pumila* Maiden & Baker, (2), Falconbridge, Lawson, King's Tableland, Mt. Victoria, a dry-ridge xerophyte; *A. oxycedrus* Sieb., Falconbridge; *A. Baueri* Benth., var. *aspera* Maiden & Betche, King's Tableland, a dry-ridge xerophyte; *A. hispidula* Willd., Blaxland to Linden; *A. falcata* Willd., (2), Nepean to Glenbrook; *A. penninervis* Sieb., (1), (2), Wentworth Falls, a form of this variable species was collected near the commencement of the descent of "Brown's Gap" into the valley of the Lett, and again at about the same elevation on the ascent from the valley at Hartley Vale; *A. obtusata* Sieb., on the roadside, Bell to Mt. Wilson, about two miles from Bell Railway-Station, a few isolated plants; *A. obtusata* Sieb., var. *Hamiltoni* Maiden & Betche, Leura, Bell, Mt. Wilson, Newnes Junction; *A. rubida* A. Cunn., (2), Glenbrook Lagoon, west to Blackheath, in swamps and on the banks of watercourses; *A. Dorothea* Maiden, Leura and Mt. Victoria, thence west beyond Eskbank, the chief stronghold of this species and of *A. obtusata* var.; with which it is frequently found associated, being at

Leura, where the two species face each other, east and west, in gregarious assemblies, neither crossing the other's boundary (The Australian Naturalist, 1913, p.180); *A. linifolia* Willd.,(2), Nepean to Leura; *A. buxifolia* A. Cunn., Nepean, Wentworth Falls, Blackheath (top of Blackheath Glen) sparsely, plentiful in "Lett Valley," between Mt. Victoria and Eskbank; *A. elongata* Sieb.,(2), var. *angustifolia* Maiden & Betche, Woodford to Blackheath, in swampy places and watercourses; *A. melanoxyton* R.Br., (2), Lawson, Blackheath (a small clump of young trees near the top of the western slope of Blackheath Glen), Cox's River; *A. implexa* Benth.,(1), (2), Glenbrook and Wentworth Falls.

*A. pubescens* is recorded in Moore and Betche's "Handbook of the Flora of N. S. Wales," p.172, from the Blue Mountains; but the writer has not yet found it in, nor are there any specimens in the National Herbarium from, that locality.

#### ROSACEÆ.

*Accena ovina* A. Cunn.,(1),(2),(3), Medlow Bath and Mt. Victoria; *A. sanguisorbæ* Vahl,(1),(2),(3), Grose Vale and Leura, thence west to Eskbank, frequent on roadsides.

#### SAXIFRAGÆÆ.

*Quintinia Sieberi* DC.,(1),(2), Blackheath, west beyond Eskbank, in brush-gullies.

*Ceratopetalum gummiferum* Sm.,(2), Lapstone Hill, Springwood, Katoomba.

*Acrophyllum venosum* Benth, Linden, Lawson, in crevices of dripping rocks.

#### MYRTACEÆ.

*Darwinia taxifolia* A. Cunn.,(2), Woodford, west to Blackheath, a swamp-xerophyte in the coastal area, which exhibits a preference for shallow basins in the benches of shelving rocks on the flattened tops of exposed ridges (on the mountains).

*Calythrix tetragona* Labill.,(2), Burragarang to Wentworth Falls.

*Micromyrtus microphylla* Benth., Springwood, Linden, on a stony ridge, Bathurst Road, near Linden Railway-Station.

*Baeckea diffusa* Sieb., Glenbrook to Linden; *B. crenulata* R.Br., Hazelbrook to Leura and Mt. King George, in swamps near the top of the ridge; *B. brevifolia* DC.,(2), Springwood, Woodford (between the Bathurst Road and the railway-line, west of Woodford Station), Wentworth Falls, Bell; *B. diosmifolia* Rudge, Glenbrook (on a swampy flat opposite the old railway-station), Valley Heights, Wentworth Falls; *B. camphorata* R.Br., Medlow Bath, Blackheath to Mt. Victoria, on dry ridges [Though patches of this species are not uncommon within the area quoted (there is a quantity of it on the ridge over which the Grand Canyon track from the Bathurst Road approaches Wall's Caves), it has been forwarded to the National Herbarium from the Blue Mountains by one collector only. This may be accounted for by the short flowering-period, the position of the flowers, which are borne chiefly on the underside of the branches, and the fugacious character of the almost colourless petals. The shrub, when not in flower, is so similar to much of the surrounding xerophytic flora as to pass unnoticed (These Proceedings, 1901, p.213)]; *B. densifolia* Sm., Valley Heights to Woodford on the lower, and Bell to Clarence on the higher elevations.

*Kunzea corifolia* Reichb., Glenbrook Lagoon, prefers a moist situation.

*Callistemon lanceolatus* DC.,(2), Linden to Leura, in swampy places; *C. Sieberi* DC.,(1), Newnes Junction, Eskbank; *C. linearis* DC., Glenbrook Lagoon; *C. pinifolius* DC., Nepean-Hawkesbury to Glenbrook, in swamps.

*Melaleuca hypericifolia* Sm., Wentworth Falls (National Pass in the "Valley of the Waters") on rocky ledges; *M. thymifolia* Sm., Nepean to Glenbrook, in moist situations; *M. linariifolia* Sm., Nepean (Glenbrook Creek), Glenbrook Lagoon: a solitary plant of this usually gregarious species was also noted on the side of the Bathurst Road, which had reached an elevation midway between Lawson and Wentworth Falls.

*Tristania neriifolia* R.Br.,(2), Springwood, Woodford, in watercourses; *T. laurina* R.Br.,(2), Nepean, Valley Heights, in a watercourse.

*Syncarpia laurifolia* Ten.,(2), Glenbrook to Springwood.

*Backhousia myrtifolia* Hook. & Harv., Glenbrook, in brush-gully.

*Myrtus tenuifolia* Sm., Springwood ("The Lagoon," Sassafras Gully).

#### UMBELLIFERÆ.

*Hydrocotyle laxiflora* DC.,(1), Wentworth Falls, Medlow Bath, Mt. Victoria, on roadsides and in grassland.

*Siebera ericoides* Benth.,(2), Glenbrook.

*Xanthosia dissecta* Hook., Wentworth Falls, Katoomba (on the swampy flat bordering Katoomba Creek, near Yosemite Park), a small, almost herbaceous plant, hardly discernible among the rushes and sedges of the swamp; *X. Atkinsoniana* F.v.M.,(2), Mt Tomah.

*Actinotus Helianthi* Labill.,(9), Glenbrook to Eskbank, a gregarious species which favours the rocky hill-tops [An isolated patch, covering approximately half an acre of ground, was noted on a dry, rocky ridge on the Mt. Hay Road at Leura, about two miles from the Bathurst Road. Between Linden and Woodford, the ridge above, and parallel to, the road and railway-line, is covered with these plants, the area occupied extending rather more than a mile]; *A. minor* DC.,(2), Linden to beyond Eskbank; *A. Forsythii* Maiden & Betche, Katoomba, Blackheath, Clarence.

*Eryngium vesiculosum* Labill.,(1), Hartley Vale, Eskbank, in grassland.

*Oreomyrrhis andicola* Endl., Mt. Wilson, Eskbank.

#### ARALIACEÆ.

*Astrotricha longifolia* Benth., Glenbrook, Springwood, Linden.

*Panax sambucifolius* Sieb.,(1),(2), Woodford to Blackheath (a broad leaved form), Mt. Victoria to Eskbank (a narrow-leaved form), *P. cephalobotrys* F.v.M., Katoomba [The only example of this species collected on the Blue Mountains, was taken from an isolated plant growing between the sleepers of a disused tram-line leading to the old coal-mine in Miners' Glen. The tramway may be approached by a short branch-track to the Orphan Rock, diverging from the main track in the descent of Katoomba Falls.

First recorded from the Blue Mountains in The Australian Naturalist, v., 2, p.222].

## RUBIACEÆ.

*Coprosma hirtella* Labill.,(2), Leura, Blackheath, Mt. Victoria, Eskbank (Brown's Gap, on roadside); *C. Billardieri* Hook.;(1),(2), Mt. Victoria, Mt. Tomah, in brush-gullies.

## COMPOSITÆ.

*Oleuria myrsinoides* F.v.M.,(1),(2), Springwood, west beyond Eskbank, a species exceptionally responsive to environment, as demonstrated by the varied forms found on the Blue Mountains (These Proceedings, 1914, p.159); *O. dentata* Mœnch, (2), Glenbrook to Woodford; *O. stellulata* DC., var. *quercifolia* Benth.,(2), Leura, Mt. Victoria, Newnes to Eskbank, in swamps; *O. elliptica* DC.,(2), Wentworth Falls, Leura, Katoomba, Mt. Victoria, on rocky benches in brush-gullies.

*Celmisia longifolia* Cass., Wentworth Falls, Leura, Katoomba, Clarence, in swamps.

*Lagenophora Billardieri* Cass.,(1),(2), Mt. Victoria.

*Brachycome diversifolia* Fish. & Mey., (1), Blackheath (top of Blackheath Glen), Mt. Victoria (road to Victoria Falls); *B. discolor* C. Stuart, Hartley Vale, near the Lett River.

*Cassinia denticulata* R.Br., Kurrajong Heights, Bell, about 1½ miles on the road to Mt. Wilson; *C. longifolia* R.Br.,(1),(2), Woodford, Lawson, Mt. Victoria; *C. aurea* R.Br.,(2), Nepean, Glenbrook Lagoon, Mt. Tomah; *C. aculeata* R.Br., Linden, west to Eskbank; *C. quinquefaria* R.Br., Newnes Junction, Clarence.

*Humea elegans* Sm.,(2), Wentworth Falls, Mt. Tomah, in brush-gullies.

*Leptorrhynchos squamatus* Less., Hartley Vale, in the valley near the "Lett."

*Helichrysum leucopsidium* DC.,(2), Leura, Newnes Junction, Clarence (two distinct forms were noted from the higher elevations); *H. collinum* DC.,(1), Nepean, Glenbrook, Burragorang to Wentworth Falls; *H. semipapposum* DC.,(1), Medlow to Blackheath, (marked morphological differences may be noted between



the adult and juvenile plants of this species); *H. adnatum* Benth.,(1), Linden.

*Helipterum incanum* DC.,(1), Hartley Vale; *H. dimorpholepis* Benth., Hartley Vale; both species in the valley in grassland.

*Gnaphalium luteo-album* L.,(1),(2), Blackheath; *G. japonicum* Thunb.,(1),(2), Leura, Blackheath, (both species in grassland and waste places); *G. japonicum* Thunb., var. *radicans* F.v.M., MS., Leura, in peaty soil.

*Erechthites Atkinsonie* F.v.M., Blackheath (foot of Govett's Leap), in brush-forest; *E. mixta* DC.,(1),(2), Lawson, west to Eskbank.

*Senecio ragus* F.v.M., Burratorang to Wentworth Falls, Blackheath, in moist gullies; *S. velleioides* A. Cunn.,(2), Mt. Victoria, a brush-gully denizen which exhibits considerable adaptability at Mt. Victoria, where it was found growing on a dry ridge on the road to Victoria Falls; a patch of this species was also noted in a somewhat exposed position on the Mt. Victoria Pass.

#### CANDOLLEACEÆ.

*Stylidium laricifolium* Rich., Glenbrook.

#### GOODENIACEÆ.

*Velleia montana* Hook., Medlow Bath (in grassland), between Clarence and Wolgan, a subalpine species rare on the Blue Mountains.

*Goodenia decurrens* R.Br.,(2), Valley Heights, west to Newnes Junction, usually on dripping rocks; *G. dimorpha* Maiden & Betche, Springwood to Blackheath, in swamps; *G. ovata* Sm.,(1), Springwood (Sassafras Gully), Burratorang to Wentworth Falls; *G. heterophylla* Sm.,(2), Glenbrook to Bell.

*Scævola ramosissima* (Sm.) Krause, (*S. hispida* Cav.),(2), Glenbrook, Woodford, Wentworth Falls; *S. Hookeri* F.v.M., Hazelbrook, Leura (on the old track from Leura to the Meeting of the Waters, Leura Falls), Blackheath (Govett's Leap), in swampy places.

*Brunonia australis* Sm.,(2), Blackheath, near Bell, on dry ridges.

## CAMPANULACEÆ.

*Lobelia gibbosa* Labill.,(1),(2), Blackheath, Bell (on road to Mt. Wilson).

## EPACRIDÆ.

*Styphelia læta* R.Br., var. *angustifolia*,(2), Springwood, Linden, Blackheath; *S. triflora* Andr., Valley Heights to Eskbank; *S. tubiflora* Sm., Leura (in the valley between Sublime Point and the Golf Links), Blackheath, Bell, on a track leading from the Mt. Wilson Road to the Valley of the Grose.

*Astroloma humifusum* R.Br., Glenbrook, Mt. Victoria (in the valley at the foot of Mt. Victoria Pass), not noted crossing the tableland.

*Melichrus rotatus* R.Br., Glenbrook.

*Lissanthe sapida* R.Br.,(2), Glenbrook, west to Wentworth Falls; *L. strigosa* R.Br.,(1), Nepean to Springwood.

*Leucopogon microphyllus* R.Br.,(1), Leura, west beyond Eskbank; *L. virgatus* R.Br., Hartley Vale, in the valley near the Lett; *L. esquamatus* R.Br., Leura (Mt. Hay Road), Medlow Bath (ridges near Wall's Caves), Bell, on stony ridges; *L. setiger* R.Br., Valley Heights to Mt. Wilson; *L. appressus* R.Br., Woodford to Linden, on a bald ridge above the Bathurst Road.

*Monotoca elliptica* R.Br.,(2), Springwood (Sassafras Gully), Leura (The Cascades, Leura Falls), Medlow Bath (in the valley near Wall's Caves); *M. ledifolia* A. Cunn., Wentworth Falls.

*Epacris reclinata* A. Cunn.,(2), Lawson to west of Eskbank; *E. rigida* Sieb.,(2), Linden (on rocks, Bathurst Road, about 200 yards west of the railway-station), Lawson, Wentworth Falls; *E. crassifolia* R.Br.,(2), Wentworth Falls, Mt. Victoria, thence to Eskbank; *E. obtusifolia* Sm.,(2), Woodford, west to Leura, in swamps; *E. Hamiltoni* Maiden & Bêche, Blackheath, near Wall's Caves, in swampy ground at the base of overhanging water-dripping rocks [an extremely local species; the original patch (which was discovered fifteen years ago) might be contained within a rood of ground. It has not yet been located outside this area]; *E. paludosa* R.Br.,(1),(2), Hazelbrook, west beyond Eskbank, in swamps, and on the banks of watercourses; *E. micro-*

*phylla* R.Br., (1), (2), Lawson to Mt. Wilson; *E. apiculata* A. Cunn., Wentworth Falls, Leura (Leura Falls), Blackheath (near Wall's Caves), in swampy detritus at the base of dripping rocks; *E. purpurascens* R.Br., Leura; *E. onosmaeflora* A. Cunn., Blackheath (top of Govett's Leap), Mt. Victoria, Lithgow.

[*E. ruscifolia* R.Br., (non Sieb.) is mentioned by Allan Cunningham in Barron Field's New South Wales, 340, as a depressed shrub on moist rocks, King's Tableland. In the Flora Austr., iv., 235, R. Brown's *E. ruscifolia* is referred by Bentham to *E. impressa* Labill., and *E. ruscifolia* Sieb., (non Br.) is held to be synonymous with *E. reclinata* A. Cunn. The latter species, with the exception of one of its forms resultant from environment (These Proceedings, 1914, p.543), agrees both in habit and habitat with Cunningham's statement in Field's New South Wales respecting *E. ruscifolia* R.Br., and is quite distinct from *E. impressa* Labill., which is described and figured in Labillardière's Plantæ Novæ Hollandiæ, i., 43, t.58, as a shrub of 3 feet (Frutex semiorgyalis), and a reference is made to the five cavities at the base of the corolla (tubus . . . cavitatibus quinque versus basim extus impressus) which form the characteristic external impressions from which the specific name is derived; while *E. reclinata* is found reclining (and specifically named from this habit) on moist, shelving rocks among ferns and sphagnum moss in the Blue Mountain gorges. No impressions are found in the corolla of *E. reclinata*, which is endemic on the Blue Mountains. *E. impressa* is (in New South Wales) found only in the extreme southern districts, and has not been collected on the Blue Mountains. In the Flora of Tasmania, i., 257, Sir. J. D. Hooker doubtfully refers *E. ruscifolia* R.Br., to *E. reclinata* A. Cunn., and includes, under that species, two specimens with Gunn's Herbarium Nos.857 (which he also queries) and 858, giving, as one of the localities in its distribution, the Blue Mountains, A. Cunn. In a footnote, he says:—"This again [Gunn's 858] approaches very closely indeed to states of *E. impressa*, to which Gunn is inclined to refer some of his specimens; it, however, appears to differ in the low, more or less procumbent, straggling habit. . . . Sieber's No.82 (in Herb. Hook.) does not appear distinct from

this [Gunn's 858] except in the larger tube of the corolla; and Allan Cunningham sends the same plant from Port Jackson under the name of *E. ruscifolia* Br." Examples of both of Gunn's specimens are now in the National Herbarium, Sydney, and neither of them can be placed under *E. reclinata* A. Cunn., both being well marked forms of *E. impressa* Labill., the Tasmanian species to which Gunn proposed to refer them. This confirms the decision of Bentham, given above, that the affinity of *E. ruscifolia* R.Br., is with *E. impressa* Labill.; and *E. ruscifolia* Sieb., together with the specimen sent by Allan Cunningham to Hooker labelled *E. ruscifolia* Br., (from the Blue Mts.) are both referable to *E. reclinata* A. Cunn.

*Lysinema pungens* R.Br., Lawson.

*Rupicola sprengelioides* Maiden & Betche, King's Tableland (These Proceedings, 1898, p.775).

*Sprengelia ponceletioides* Sond., (*Poncletia monticola* A. Cunn.), [In Barron Field's New South Wales, p.341, Allan Cunningham records *Poncletia sprengelioides* R.Br., as a rare, suffruticose, dense-habited plant adhering to rocks perpetually damp, margins of the Cascade, King's Tableland. In the Fl. Austr., iv., 248, *P. sprengelioides* R.Br., is recorded in marshes near Sydney, Coll. R. Brown, Sieber, and others, but is not mentioned as found on the Blue Mountains. De Candolle, Prod. vii., 767, also records *P. sprengelioides* R.Br., from Sydney, Coll. A. Cunningham. *Sprengelia ponceletioides* Sond., (*P. monticola* A. Cunn.) is recorded in the Fl. Austr., iv., 248, on rocks perpetually wet, near Campbell's Cataract, Blue Mts., Coll. A. Cunn.; and *P. monticola* (A. Cunn., in litt.) is given in DC., Prod. vii., 768, from the Blue Mts., Coll. A. Cunn. It will be seen that Allan Cunningham has perpetrated a (presumably) clerical error in his paper, incorporated in Barron Field's New South Wales, by recording R. Brown's *Poncletia sprengelioides* from the Blue Mountains, instead of his own *P. monticola*.], Lawson, Wentworth Falls, Leura (Leura Falls, on the face of the cliffs); *S. incarnata* Sm., (2), Leura, Clarence, in swamps.

*Dracophyllum secundum* R.Br., (2), Springwood to west of Eskbank, in crevices of moist rocks.

## LOGANIACEÆ.

*Mitrasacme pilosa* Labill., (2), Wentworth Falls; *M. serpyllifolia* R.Br., Hazelbrook, west to Eskbank, in swamps.

*Logania pusilla* R.Br., Linden, on the northern side of the Bathurst road approaching the railway-station from Falconbridge.

## SCROPHULARINEÆ.

*Veronica perfoliata* R.Br., (1), Eskbank (Brown's Gap); *V. Derwentia* Littlj., Eskbank (Brown's Gap); *V. notabilis* F.v.M., Katoomba (Nelly's Glen).

*Euphrasia Brownii* F.v.M., (1), (2), Leura, Mt. Hay Road, Blackheath to west of Eskbank.

## GESNERACEÆ.

*Fieldia australis* A. Cunn., (2), Leura (The Forest, Leura Falls), Katoomba, Mt. Tomah.

## ACANTHACEÆ.

*Eranthemum variabile* R.Br., (3), Glenbrook.

## VERBENACEÆ.

*Chloanthes stæchadis* R.Br., (2), Mt. Irvine; *C. glandulosa* R.Br., Springwood. In a note on *C. glandulosa*, Bentham, Fl. Austr., v., 45, says, "observations may possibly show this to be a luxuriant form of *C. stæchadis*." Specimens in the National Herbarium from "The Valley," Hornsby (W. F. Blakely, iv., 1914) and West Maitland (Miss A. Brewster, x., 1908) are connecting links between the two species, and strongly support Bentham's suggestion.

## LABIATÆ.

*Prostanthera lasianthos* Labill., (2), Mt. Tomah, Bell; *P. cœrulea* R.Br., (2); *P. violacea* R.Br., Nepean, Valley Heights, Springwood; *P. rhombea* R.Br., Katoomba (in the valley at the foot of Minnie-Ha-Ha Falls), Mt. Wilson; *P. linearis* R.Br., (2), Springwood ("The Lagoon," Sassafras Gully); *P. saxicola* R.Br., (a form), Katoomba (on a ridge at Narrow Neck), Blackheath, Mt. Victoria.

*Hemigenia purpurea* R.Br.,(2), Linden, Woodford, on the dry ridge overlooking the Bathurst Road between Linden and Woodford.

## PARONYCHIACEÆ.

*Scleranthus biflorus* Hook., Woodford, to west of Eskbank, in grasslands.

## LAURINEÆ.

*Cassytha glabella* R.Br.,(2), Glenbrook (Lagoon), Woodford, Leura; *C. pubescens* R.Br., Valley Heights, Wentworth Falls, Blackheath; *C. paniculata* R.Br., Springwood; *C. melantha* R.Br., Bell, on side of road to Mt. Wilson.

## PROTEACEÆ.

*Petrophila pedunculata* R.Br.,(2), Nepean to Katoomba.

*Isopogon anethifolius* R.Br.,(2), Leura, Mt. Hay Road; *I. Fletcheri* F.v.M., Blackheath (These Proceedings, 1894, p.151), an exceedingly rare species collected by Mr. J. J. Fletcher in the neighbourhood of Govett's Leap, November, 1893.

*Conospermum longifolium* Sm., var. *angustifolium* R.Br., Glenbrook to Wentworth Falls; *C. tenuifolium* R.Br.,(2), Lawson to Bell. *C. ellipticum* Sm., is recorded in Moore and Betche's Handbook of the Flora of New South Wales, from the Blue Mountains, but there are no specimens in the National Herbarium from this locality, nor has the writer noted its occurrence.

*Symphyonema montanum* R.Br.,(2), Linden to Eskbank.

*Persoonia hirsuta* Pers.,(2), Glenbrook, Blaxland; *P. Chamæpitys* A. Cunn.,(2), Lawson to west of Eskbank; *P. linearis* Andr.,(1), Nepean to Springwood, Cox's River, Eskbank; *P. pinifolia* R.Br., Valley Heights, Springwood, Linden; *P. mollis* R.Br.,(1),(2), Valley Heights to Mt. Wilson; *P. oblongata* A. Cunn., Glenbrook to Springwood [The only specimen in the National Herbarium from the Blue Mountains was collected by Mr. J. J. Fletcher at Springwood (the western boundary of the species) in 1888. About a year ago, the writer noticed it on the Bathurst Road between Valley Heights and Springwood. It is remarkable that this gregarious species should have so long

escaped the notice of collectors, as no difficulty was experienced in tracing the plants from the roadside, most of the journey between Springwood and Glenbrook. It was seen to be exceptionally plentiful in the neighbourhood of the 41-mile-post, but only a few scattered bushes were noted at Glenbrook, on the northern side of the old railway-station]; *P. myrtilloides* Sieb., (2), Wentworth Falls to Eskbank; *P. angulata* R.Br., Woodford to Mt. Victoria [an individualistic species, which, like most of its congeners, fruits freely. No seedlings have been noted in the neighbourhood of any of the invariably isolated plants known to the writer, though the seeds germinate readily under artificial treatment]; *P. acerosa* Sieb., (2), Valley Heights to Eskbank.

*Grevillea asplenifolia* R.Br., Springwood, Lawson, on the banks of watercourses, in brush-gullies; *G. laurifolia* Sieb., (2), Valley Heights to Eskbank; *G. Gaudichaudii* R.Br., Wentworth Falls, Katoomba, Blackheath, Clarence [This rare species was, until recently, known only from Wentworth Falls and Katoomba (a few isolated plants). In view of the question of natural hybridism raised by Mr. J. J. Fletcher in relation to this species (These Proceedings, 1910, p.434) it is of interest to note that, at Clarence, it was again found (an individual specimen) on the slope of a hill leading into a swamp, *G. laurifolia* being noted on the plateau above, and *G. acanthifolia* in the swamp below]; *G. acanthifolia* A. Cunn., Wentworth Falls, to west of Eskbank, in swamps; *G. mucronulata* R.Br., Nepean to Valley Heights; *G. phyllicoides* R.Br., Nepean to Wentworth Falls; *G. sericea* R.Br., Glenbrook to Blackheath and Mt. Tomah.

*Hakea pugioniformis* Cav., (2), Woodford to Eskbank, in swamps, and on dry, stony ridges; *H. saligna* R.Br., (1), (2), Hazelbrook, Lawson, Blackheath, in moist, sheltered gullies; *H. propinqua* A. Cunn., (2), Linden to Eskbank, chiefly in swamps; *H. acicularis* R.Br., (1), Nepean, Glenbrook; *H. microcarpa* R.Br., (1), Cox's River.

#### THYMELEÆ.

*Pimelea collina* R.Br., (2), Katoomba to Eskbank; *P. curviflora* R.Br., Leura, near Golf Links.

## LORANTHACEÆ.

*Atkinsonia ligustrina* F.v.M., (2), Linden to Lawson, Mt. Tomah, Bell, on side of the road to Mt. Wilson, about 1½ miles from Bell Railway-Station.

## SANTALACEÆ.

*Choretrum spicatum* F.v.M., (1), Mt. Victoria, to west of Eskbank; *C. Candollei* F.v.M., (2), Glenbrook to Mt. Wilson.

*Omphacomeria acerba* DC., (1), (2), Leura, to west of Eskbank.

*Exocarpus stricta* R.Br., (1), (2), Nepean, Glenbrook.

## EUPHORBIACEÆ.

*Poranthera ericifolia* Rudge, (2), Glenbrook to Leura; *P. corymbosa* Brongn., (2), Glenbrook to Blackheath.

*Micrantheum ericoides* Desf., Blaxland, Linden, Hazelbrook.

*Pseudanthus pimeleoides* Sieb., (2), Linden, Mt. Hay; *P. divaricatissimus* Benth., Wentworth Falls to Eskbank.

*Ricinocarpus pinifolius* Desf., Nepean, Springwood (Sassafras Gully).

*Monotaxis linifolia* Brongn., (2), Leura (near the Fishing Pool), Katoomba, in swamps.

## CASUARINEÆ.

*Casuarina nana* Sieb., (2), Wentworth Falls, to west of Eskbank.

## CONIFERÆ.

*Pherosphera Fitzgeraldi* F.v.M., Wentworth Falls, Katoomba.

## CYCADEÆ.

*Macrozamia corallipes* Hook., Glenbrook.

## ORCHIDÆ.

*Thelymitra venosa* R.Br., Lawson to Mt. Victoria.

*Cryptostylis longifolia* R.Br., (2), Woodford to Eskbank, on dry hillsides [in the coastal area, this species is found in swamps]; *C. leptochila* F.v.M., (2), Springwood, Kurrajong, Wentworth Falls, Bell.

*Prasophyllum australe* R.Br., Leura, Blackheath; *P. flavum* R.Br., (2), Hazelbrook to Katoomba [Fitzgerald (Aust. Orchids,



i., 23) says of this species, "possibly epiphytal on the roots of trees." The writer has on many occasions carefully unearthed the tubers of this species, without finding any connection between them and other root-growths]; *P. striatum* R.Br., (2), Woodford to Blackheath.

*Lyperanthus ellipticus* R.Br., Woodford, Wentworth Falls, Leura (near the Amphitheatre, Leura Falls).

*Caladenia dimorpha* Fitzg., (2), Newnes Junction to Eskbank.

*Adenochilus Nortoni* Fitzg., Lawson, Wentworth Falls, Medlow Bath, Mt. Victoria (type-locality).

#### IRIDEÆ.

*Libertia paniculata* Spreng., (1), (3), Wentworth Falls, Blackheath; *L. pulchella* Spreng., Hazelbrook, Lawson, Leura (The Fishing Pool), Mt. Tomah, on boulders in the watercourses, and on the face of dripping rocks.

#### LILIACEÆ.

*Blandfordia grandiflora* R.Br., (2), Wentworth Falls, Mt. Tomah, Leura (in peaty pockets, on the craggy escarpment overhanging Leura Gorge).

*Tricoryne elatior* R.Br., Glenbrook, Bell.

*Stypandra glauca* R.Br., (2), Lapstone Hill, Valley Heights.

*Alania Endlicheri* Kunth, (2), Woodford to Wentworth Falls, Mt. Tomah, in the crevices of wet rocks.

*Xerotes Brownii* F.v.M., (2), Falconbridge; *X. glauca* R.Br., (2), Valley Heights to Mt. Victoria; *X. flexifolia* R.Br. (2), Glenbrook to Leura.

#### XYRIDEÆ.

*Xyris gracilis* R.Br., (2), Wentworth Falls to Eskbank (in peaty soil); *X. operculata* Labill., var. *macrocephala* Benth., Woodford to Bell, in swamps.

#### JUNCACEÆ.

*Luzula campestris* DC., (1), (2), Newnes Junction to Eskbank.

*Juncus Fockii* Fr. Buch., Lawson.

## RESTIACEÆ.

*Lepyrodia scariosa* R.Br.,(1),(2), Wentworth Falls to Eskbank;  
*L. anarthria* F.v.M., Eskbank, in a swamp on the eastern side of  
 the Eskbank Basin.

*Restio fastigiatus* R.Br., Medlow (near Wall's Caves), Black-  
 heath, Mt. Wilson; *R. australis* R.Br.,(2), Medlow Bath to Esk-  
 bank, in swamps.

## CYPERACEÆ.

*Cyperus eragrostis* Vahl,(1), Nepean to Blackheath.

*Heleocharis multicaulis* Sm., Wentworth Falls, Katoomba, Mt.  
 Tomah.

*Lepironia mucronata* Rich., Glenbrook Lagoon, the prevailing  
 reed in the waters of the Lagoon, and it is somewhat remarkable  
 that it has not been previously noted, as the flowerheads are very  
 conspicuous, and differ considerably in appearance from the usual  
 lake-vegetation. It is recorded generally in the coast district, and  
 specifically from Port Jackson, but the only example in the  
 National Herbarium from Port Jackson was collected by the late  
 Mr. Betche, and is labelled, near Sydney, xi, 1883. It is plentiful  
 in the Pieton Lakes.

*Cyathochete diandra* Nees, Hazelbrook, on the fringe of a  
 swamp.

*Schœnus turbinatus* Poir., Springwood to Eskbank; *S. imberbis*  
 R.Br., Valley Heights to Woodford. Mt. Wilson; *S. ericetorum*  
 R.Br., Leura to Newnes Junction; *S. tenuissimus* Benth., Leura,  
 between Sublime Point and the Golf Links, in peaty soil; *S. vil-  
 losus* R.Br., (2), Lawson west to Eskbank; *S. brevifolius* R.Br., in  
 a swamp on the southern side of the Bathurst Road, midway be-  
 tween Leura and Wentworth Falls; *S. melanostachys* R.Br., Nepean  
 to Lawson.

*Mesomelœna deusta* Benth.,(2), Glenbrook to Bell; *M. sphæ-  
 rocephala* Benth., King's Tableland to Newnes Junction, in  
 swamps.

*Tricostularia pauciflora* Benth., Woodford to Eskbank.

*Lepidosperma lineare* R.Br., (1), Wentworth Falls, Newnes  
 Junction; *L. tortuosum* F.v.M., Leura, Clarence, the Zigzag; *L.*

*fleurosum* R.Br., Leura, Mt. Wilson, Eskbank; *L. filiforme* Labill., (1), Springwood, Leura; *L. Neesii* Kunth, Wentworth Falls, Woodford, Eskbank.

*Gahnia Sieberi* Bæck., Lawson, to west of Eskbank; *G. microstachya* Benth., Lawson to Eskbank.

*Caulis pentandra* R.Br., (2), Woodford, Wentworth Falls.

*Umicinia tenella* R.Br., Katoomba (Nelly's Glen), an individual tuft growing in a crevice in the rocky wall of the Gorge, Mt. Wilson.

#### GRAMINEÆ.

*Amphipogon strictus* R.Br., var. *setifer*, (2), King's Tableland to Eskbank.

*Panicum obseptum* Trin., Hawkesbury-Nepean, Falconbridge, in waterholes.

*Tetrarrhena juncea* R.Br., Lawson to Bell.

*Notochloë microdon* Domin, (*Triodia microdon* F.v.M.), Hazelbrook to Blackheath, in swamps.

#### LYCOPODIACEÆ.

*Lycopodium laterale* R.Br., (2), Woodford, Mt. Tomah.

#### FILICES.

*Leptopteris Fraseri* (Hook. et Grev.) Presl., (2), Kurrajong Heights, Leura to Mt. Wilson.

*Dicksonia antarctica* Labill., (2), Leura (Leura Falls), Blackheath (Blackheath Glen) [Allan Cunningham, in Barron Field's New South Wales, mentions examples of this species at Mt. Tomah thirty-five (35) feet high. The writer recalls a fine clump about two miles from Blackheath Glen, nearly under the Medlow Bath "Hydro," which was unfortunately burnt out some fifteen years ago.]

The following species were noted crossing the mountains at all elevations from the "Nepean" to west of Eskbank:—*Viola hederacea* Labill., *Bursaria spinosa* Cav., *Marianthus procumbens* Benth., *Billardiera scandens* Sm., *Comesperma ericinum* DC., *Portulaca oleracea* L., *Hypericum japonicum* Thunb., *Boronia floribunda*

Sieb., *Olar stricta* R.Br., *Stackhousia viminea* Sm., *Cryptandra amara* Sm., *Oxylobium staurophyllum* Benth., *Mirbelia reticulata* Sm., *Spherolobium vimineum* Sm., *Phyllota phyllicoides* Benth., *Pultenea scabra* R.Br., *Dillwynia ericifolia* Sm., *Bossicea heterophylla* Vent., *Hovea linearis* R.Br.; *Acacia juniperina* Willd., *A. suaveolens* Willd., *A. myrtifolia* Willd., *A. longifolia* Willd., *A. elata* A. Cunn., *A. discolor* Willd.; *Callicoma serratifolia* Andr., *Bæckea linifolia* Rudge; *Leptospermum parvifolium* Sm., *L. flavescens* Sm., *L. lanigerum* Sm., *L. arachnoideum* Sm., *L. pendulum* Sieb.; *Kunzea capitata* Reichb.; *Siebera linearis* Spreng., *S. Billardieri* F.v.M.; *Xanthosia pilosa* Rudge, *Pomax umbellata* Sol.; *Calotis cuneifolia* R.Br., *C. lappulacea* Benth.; *Vittadinia australis* A. Rich., *Helichrysum scorpioides* Labill., *H. apiculatum* DC.; *Candollea serrulata* Labill., *C. linearis* F.v.M.; *Dampiera Brownii* F.v.M., *D. stricta* R.Br.; *Goodenia bellidifolia* Sm., *Wahlenbergia gracilis* DC.; *Leucopogon lanceolatus* R.Br., *L. muticus* R.Br., *L. ericoides* R.Br., *Brachyloma daphnoides* Benth., *Epacris pulchella* Cav., *Mitrasacme polymorpha* R.Br., *Logania floribunda* R.Br., *Veronica calycina* R.Br., *Utricularia dichotoma* Labill., *Prunella vulgaris* L., *Petrophila pulchella* R.Br., *Isopogon anemonifolius* R.Br., *Conospermum taxifolium* Sm.; *Persoonia ferruginea* Sm., *P. salicina* Pers.; *Lambertia formosa* Sm., *Hakea dactyloides* Cav., *Lomatia silaifolia* R.Br., *Telopea speciosissima* R.Br., *Pimelia linifolia* Sm., *Leptomeria acida* R.Br., *Poranthera microphylla* Brongn., *Amperea spartioides* Brongn., *Phyllanthus thymoides* Sieb., *Dipodium punctatum* R.Br., *Hæmodorum planifolium* R.Br.; *Patersonia sericea* R.Br., and var. *longifolia*, *P. glabrata* R.Br.; *Smilax australis* R.Br., *Sowerbaea juncea* Sm., *Laxmannia gracilis* F.v.M., *Xerotes longifolia* R.Br., *Juncus communis* E. Mey., *Lepidosperma laterale* R.Br., *Gahnia psittacorum* Labill., *Caustis flexuosa* R.Br., *Ehrharta stipoides* Labill., *Echinopogon ovatus* Palis., *Selaginella uliginosa* Spreng.